

## **UPDATE ON 80/20 BY 2020 WASTE DIVERSION GOAL**

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### **EXECUTIVE SUMMARY**

In 2007, Council approved the 80/20 by 2020 waste diversion strategy (UE2007-35). The strategy declared a goal of diverting waste going to The City of Calgary landfills by 80 per cent by the year 2020. This was an ambitious target for Calgarians as Calgary was starting from a level of only 20 percent diversion in 2007.

The 80 per cent diversion target was to be achieved through a combination of resource recovery programs (such as recycling and composting), policy initiatives (banning material from landfills), and other stewardship and education programs. The original plan identified that the above activities had the potential to divert 70 per cent of the waste at program maturity. The remaining 10 per cent was to be addressed by emerging waste-to-energy technologies.

Based on current programs and data, it is estimated that waste diversion from all sectors will reach a minimum of 60 per cent. Although this is below the original target it does represent significant progress and would put Calgary in the top quartile for North American cities with respect to waste diversion. This 60 per cent diversion rate is based on conservative estimates (low capture rates) and does not include any diversion due to waste-to-energy technologies.

Analysis shows that the single family sector is on track and leading the way with an estimated 70 per cent diversion rate by 2020. Unfortunately, the other three sectors (multi-family, industrial, commercial and institutional and construction and demolition) are lagging behind.

This report provides an update on the initiatives and activities across all the waste sectors as we continue to work toward zero waste.

### **ADMINISTRATION RECOMMENDATION(S)**

That the SPC on Utilities and Corporate Services receive this report for information.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

On 2007 November 26, Council approved Waste & Recycling Services' strategy to achieve 80 per cent diversion of waste resources from landfills by 2020 (80/20 by 2020) (UE2007-035). The 80/20 by 2020 strategy identified a number of planned activities which would result in diverting waste from The City's landfills including blue and green cart, diversion programs for the multi-family (MF), industrial, commercial & institutional (ICI) and construction & demolition (C&D) sectors and pay-as-you-throw options.

### **BACKGROUND**

Since 2007, WRS has been working at implementation of diversion initiatives to reduce the volume of waste going to landfill. Since 2009, Council has approved plans for single family (SF) blue cart and green cart, MF recycling and ICI diversion programs. While success has been achieved in a number of areas, most notably the single family waste sector, consumerism, combined with increased population and economic growth continues to drive overall waste generation, outpacing diversion. However, as of 2014, Calgarians on average sent 627k/capita to landfills – a drop of approximately 125 kg/capita over the last five years. This compares favourably to the annual national average of 777kg/capita.

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In the development of diversion programs, Calgary follows a hierarchy of central principles of waste management where waste prevention (reduce/reuse), recycling and composting is encouraged in all four sectors to maximize diversion and lessen the impact of materials prior to residual management.

Part of the success of sector-wide waste management programming relies on collaboration between municipalities and the private sector. In Calgary, The City provides waste and recycling services for 100 per cent of single family homes; up to 10 per cent of the ICI and MF sectors; and a small percentage of the C&D sector. The remaining services in ICI, C&D and MF (the largest generators) are provided in partnership with private sector companies as chosen by the individual building owners/managers, businesses or construction/demolition projects. In 2014, Council approved waste diversion strategies for the MF and ICI sectors. These were developed based on customer and sector demand, and are currently being implemented.

Leading the community towards zero waste is the overarching vision of 80/20. Zero waste is a goal where all discarded materials are treated as resources for others to use. The next few years will see the introduction of several new programs and a revised plan toward the goal. With program and infrastructure maturity comes more knowledge to improve program efficiencies. Waste-to-energy should only be applied when all other diversion potential has been exhausted. Calgary will only fully maximize diversion programs after 2020.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

Diversion and reduction of waste at The City of Calgary's three waste management facilities has been accomplished through specific recycling programs, stewardship programs, policy/landfill pricing initiatives and community education programs. Waste received at City of Calgary waste management facilities comes from four sectors. Each sector is unique in composition.

As of year-end 2014, each of the waste sectors showed positive change diverting waste from landfills.

- Single family residences diverted 34 per cent (102,600 tonnes) of recyclable and organic material from our landfills.
- Multi-family residents are currently diverting an estimated 17 per cent (19,200 tonnes) of materials from our landfills from all programs (City and stewardship programs).
- Although data pertaining to ICI waste is limited, anecdotal information received from the private sector indicates that over 10,000 tonnes of organic material were diverted from landfills to composting facilities in and around the city.
- Private industry continues to be highly active in C&D diversion. A large private C&D materials recovery facility was developed in 2012 and rough estimates indicate that the facility takes over 80,000 tonnes of recyclable material per year.

In the 80/20 waste diversion goal, single family homes were the first focus with the implementation of the Blue Cart Recycling Program, followed by Council approving the Green Cart Organics Program. During the same time, a material-specific recycling program was established in the C&D sector with the Designated Materials Program.

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The City is now working to address waste diversion in the complex ICI and multi-family sectors. These sectors are more challenging due to the variety of stakeholders, building types and greater diversity of customer needs and materials.

The period of 2015 to 2020 will represent the biggest shift in diversion for Calgary. Maximizing the diversion in existing programs and introducing new programs will ensure a diversion rate of 60 per cent of materials across all sectors by 2020. The overall diversion estimate of 60 per cent relies on the success of the single family programs and the collaborative efforts with the private sector in managing diversion from the multi-family, ICI and C&D sectors.

The 60 per cent diversion rate is based on conservative estimates (low capture rates) for diversion and excludes waste-to-energy as a form of residual management. It is crucial to establish diversion programs in all sectors to divert as much material as possible, prior to investing in expensive residual management infrastructure such as waste-to-energy that ranges between \$100 - \$500 million considering feedstock, volume and types of technology. In addition, recent unsuccessful developments in other jurisdictions support the idea that technologies are still being tested. Calgary is in an advantageous position to learn from these municipalities and provide clear cost effective direction with regard to such developments

Major steps will be taken within the next few years to remove materials from the waste stream that will benefit Calgarians and the environment. These steps will focus on recyclables, organics, waste prevention, pay-as-you-throw, extended producer responsibility, residual management and collaboration (Attachment 2).

### **Stakeholder Engagement, Research and Communication**

Stakeholder engagement is an integral part of all waste diversion programs and strategies. Stakeholder input helps shape and influence program design and execution, and engagement plays a key role in achieving success.

All sectors support the efforts toward 80/20 as evidenced in recent citizen surveys:

- 91 per cent of citizens said they are satisfied with The City's environmental performance.
- 93 per cent of citizens said that they support the implementation of a City-wide recycling program for multi-family households.
- 95 per cent of citizens said Blue Cart increased their perceived quality of life.
- 96 per cent of citizens said that reducing waste to landfill is important.

### **Strategic Alignment**

This report is aligned with Council's Priority for a Healthy and Green City and WRS' Strategy related to Council Outcome: H1 Implement the green cart program and multi-family recycling strategy, and reduce industrial, commercial and institutional waste in our landfills. It is also a critical element for progress toward 80/20.

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### **Social, Environmental, Economic (External)**

#### **Social**

Diverting materials from landfill requires changes in behaviour by Calgarians. The readiness of Calgarians to participate in waste diversion programs has been growing over the last number of years. It is driven by an increase in knowledge related to the negative impacts of waste. Implementation of waste diversion programs will make Calgary a more attractive place to live and increase Calgary's reputation as an environmentally-friendly city.

#### **Environmental**

Diverting waste from landfill is a critical component of reducing Calgary's impact on land, air and water. While there are many different types of environmental impacts associated with the landfills, they are commonly grouped into two categories: atmospheric and hydrological. Diverting waste reduces greenhouse gas emissions, redirects natural resources back into the economy and reduces future contamination and environmental liability.

#### **Economic**

The rate of waste generation increases with the rate of the gross national product (GNP) and consumerism. More waste increases liability and the cost of long-term operations of the landfills. It is not only the cost of landfilling that is considered, but also infrastructure to process diverted materials. Ensuring the longevity of landfills in Calgary is critical, either as storage facilities for future divertible material or for the management of residuals. Partnering with the private sector provides an incentive for economic development in the community.

### **Financial Capacity**

#### **Current and Future Operating Budget:**

Program initiatives to achieve the 80/20 waste diversion goal are incorporated in Action Plan 2015-2018.

#### **Current and Future Capital Budget:**

Program initiatives to achieve the 80/20 waste diversion goal are incorporated in Action Plan 2015-2018. The 80/20 programs and infrastructure mentioned within are aligned with the WRS Infrastructure and Investment Plan (WRIIP).

### **Risk Assessment**

There are no significant risks associated with this report. The content has been developed and provided to Committee for information.

### **REASON(S) FOR RECOMMENDATION(S):**

WRS' Action Plan 2015 to 2018 includes strategies to maximize diversion from existing programs and introduce new programs to continue to divert materials from landfill. Next steps and strategies will be developed for implementation in the 2019 to 2022 business cycle.

### **ATTACHMENT(S)**

1. Update on 80/20 by 2020 Waste Diversion Goal
2. Next Steps 2015-2018